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APPARATUS FOR HOLDING AN ARTICLE AND A SECURITY DEVICE THEREFORTECHNICAL FIELD

This invention relates to apparatus for holding an article, e.g. a disk such as a CD or DVD, and to a security device for use therewith.

BACKGROUND ART

There are many forms of apparatus on the market for holding a disk. One example, is the applicant's product as described in WO96/14636 in which holding means releasably holds the disk via the central hole therein. It is desirable to provide such apparatus with security features to help prevent theft from retail outlets. WO02/31831 describes two forms of device which interact with the holding means: a strip which slides beneath the holding means to prevent depression thereof or a cap which fits within a release button to prevent its contraction. These both provide a relatively low level of security but may be useful, for example, to prevent release of the disk, either intentionally by a thief or inadvertently during transit, e.g. by depression of the release button through a wall of a container housing the apparatus.

WO02/39451 describes a lockable security device which provides an enhanced level of security for the apparatus described in WO96/14636 in that the disk is locked to the apparatus and/or the container is locked in a closed position and can only be released upon application of a special tool, e.g. by insertion with a particular magnetic release apparatus. This provides a significant enhancement of the apparatus described in WO96/14636.

The present invention seeks to extend many of the advantages of the lockable security device described in WO02/39451 to other types of disk holder (and other apparatus for holding an article having a hole therein) in which the security device shown in WO02/39451 cannot be used or can only be used to a limited extent. It also provides an alternative form of security device for use with the apparatus described in WO96/14636.

Whilst the embodiments shown are for holding an article having a hole therein, e.g. a disk such as a CD or DVD, the invention can be used with apparatus for holding other types of article for which it is desired to provide some level of security, for example valuable articles or articles for which restricted access is desirable, e.g. medical products.

SUMMARY OF THE INVENTION

According to a first aspect of the invention, there is provided apparatus for holding an article, the apparatus comprising holding means for releasably holding the article; obstructing means moveable between a first position which permits the article to be received by the holding means and removed therefrom and a second position in which it inhibits operation of the holding means to release the article and/or inhibits removal of the article therefrom; and securing means engageable with the apparatus so as to secure the obstructing means in said second position.

According to a second aspect of the invention, there is provided, a kit of parts comprising: apparatus having holding means for releasably holding an article; obstructing means for inhibiting operation of the holding means and/or inhibiting removal of the article therefrom; and securing means engageable with the apparatus so as to inhibit or prevent removal of the obstructing means from the holding means.

According to a third aspect of the invention, there is provided apparatus having holding means for releasably holding an article, the holding means being adapted to receive obstructing means for inhibiting operation of the holding means and/or inhibiting removal of the article therefrom, and adapted to receive securing means engageable therewith so as to inhibit or prevent removal of the obstructing means from the holding means.

According to a further aspect of the invention, there is provided holding means and/or securing means adapted for use with such apparatus.

Optional and preferred features of the invention will be apparent from the following description and from the subsidiary claims of the specification.

BREIF DESCRIPTION OF DRAWINGS

The invention will now be further described, merely by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of a disk holder together with an obstruction cap and security device prior to installation into the disk holder according to a first embodiment of the invention;

Figure 2 is a perspective view of a disk holder together with an obstruction cap and a security device when installed within the disk holder according to the first embodiment of the invention;

Figure 3 is a plan view of the arrangement shown in Figure 2;

Figure 4 is a cross-sectional view along line A-A of Figure 3;

(Figures 2 and 3 omit the disk for clarity but the disk is shown in Figure 4)

Figure 5 is a perspective view of part of a container having a disk holder therein showing another form of obstructing cap which is pivotably mounted on the container;

Figure 6 is a perspective view of the obstructing cap from the opposite direction compared to Figure 5;

Figure 7 is a perspective view of a disk holder with a security device partially inserted therein according to another aspect of the invention;

Figure 8 is a further perspective view of the apparatus shown in Figure 7 along the length of the security device; and

Figures 9 and 10 are perspective views of another embodiment which is a variant of that shown in Figures 5 and 6.

BEST MODE OF THE INVENTION

Figure 1 shows a perspective view of a disk holder comprising a tray 1 based upon that used in well-known apparatus known as a "jewel-box" but modified by the provision of a first slot 2A in the edge of a platform 2 provided at the centre of the tray 1 and a second slot 3A through a raised area 3 provided along one side of the tray 1.

Disk holding means 4 in the form of a conventional, circular arrangement of arms 5 is provided on the platform 2 for releasably holding a disk 6 (see Figure 4) by fitting through the central aperture thereof.

An obstructing cap 7 is provided having a projecting part for fitting to the disk holding means 4 after a disk has been mounted thereon. The cap may click into place by means of a snap-fit holding mechanism or may simply rest within the holding means 4. Such a cap may take a variety of forms but functions to inhibit operation of the disk holding means (e.g. by preventing inward flexing of the arms 5 so as to release the disk 6) and/or by inhibiting removal of the disk, e.g. by means of a circular flange 7A which overlaps the upper surface of the disk 6. As shown, the flange 7A overlaps a relatively small area of the upper surface of the disk 6 adjacent the central aperture thereof.

As indicated above, such a cap 7 provides a relatively low level of security. However, the security is greatly enhanced by providing a security device 8 which slides beneath the disk 6 through the slot 2A in the platform 2 so as to engage with the cap 7 in a manner which prevents removal of the cap 7. The security device 8 thus secures the cap 7 to the apparatus. The cap 7 can thus only be removed to enable the disk 6 to be released, following withdrawal of the security device 8. As shown in the drawings, the security device preferably also passes through the slot 3A in the edge of the tray 3 so it can be installed from outside

the apparatus. It is also preferably provided with a locking mechanism 9 and this is preferably actuated when the security device is inserted into the tray 1 and prevents withdrawal of the security device 8 until the locking mechanism 9 has been released, e.g. by application of a particular form of magnetic lock release apparatus (not shown).

In the arrangement shown, the security device 8 secures the cap 7 in place by means of arms 8A and 8B which engage within slots 7B in a cylindrical part 7C projecting from the underside of the cap 7 and which fits through an aperture in the centre of the disk holding means 4. As shown, arms 8A and 8B pass through slot 2A in one side of the platform 2. They may also project out through a further slot (not shown) on the opposite side of the platform 2.

Other forms of engagement may be used between the projecting part of the cap 7 and the security device 8 which inhibit or prevent removal of the cap 7 from the disk holding means 4 until the security device 8 is removed or disengaged therefrom.

The cap 7 is also preferably provided with a lifting portion 7D to make it easier to grasp.

The security device 8, and particularly the locking mechanism 9 thereof, may be similar to the security device described in WO02/39451.

It will thus be appreciated, that the interaction between the cap 7 and the security device 8 enables the benefits of such a locking mechanism to be provided in disk holding apparatus which differs from that disclosed in WO96/14636 and which does not rely upon depression of parts towards a base portion to release the disk. In the embodiment described in relation to Figures 1-4, the distal end of the security device 8 does not interact with the disk holding means 4 so as to inhibit its operation, e.g. by preventing depression parts of the release mechanism, as described in WO02/31831 but, instead,

interacts with part of the cap 7 inserted through the disk so as to secure the cap and hence the disk in place.

The security device 8 may also have a further arm 8C to hold a lid of the disk holding apparatus in a closed position in the manner described in WO02/39451.

The arrangement disclosed in WO02/39451 can also be modified in the manner described above to provide additional security. A cap may, for example, be provided for fitting to the disk holding means, as described in WO02/31831, with an S-shaped portion projecting from the underside thereof for fitting into an S-shaped gap between the halves of a Yin-yang shaped release button. The security tag inserted beneath the disk and beneath the release button may be provided with arms (as shown in Figure 1 hereof) for engagement with grooves or slots provided in the sides of the S-shaped portion to prevent removal of the cap. Such a cap has an upper portion which rests on the top of the release button but which also preferably extends beyond the release button so as to overlap the upper surface of the disk and thereby provide an additional obstruction to removal of the disk.

Figures 5 and 6 show perspective views of part of a container according to another embodiment of the invention having a disk holder therein. The container comprises a base portion 10 and a lid portion (not shown) hinged thereto. Disk holding means 11 is provided on the base portion 10 and an upstand 12 is provided for surrounding the periphery of a disk held thereon. The disk holding means 11 may take a variety of forms but, in this embodiment, it comprises a hollow, cylindrical column 13 for fitting through the central aperture of one (or more) disks. An obstruction cap 14 is provided for fitting into the cylindrical column 13 so as to prevent removal of disks therefrom.

The cap 14 is pivotably mounted to the base portion 10 by means of two curved arms 14A and 14B which pivot about connections with the upstand 12. Preferably, the arms 14A and 14B snap-fit within slots 12A, 12B in the upstand 12 so the cap 14 can be pivoted 90 degrees about the connection therewith from

the position shown in figures 5 and 6 to a position in which the cap engages with the column 13.

Other forms of obstruction means can be used in place of that shown which is movable between a first position which permits a disk to be installed on or removed from the disk holding means and a second position in which it interacts with the disk holding means and/or obstructs the removal of a disk therefrom. Preferably (as in the illustrated embodiment), the obstruction means overlaps a minor area of the disk to obstruct its removal from the disk holding means. Also, the obstruction means is preferably pivotably mounted with respect to the base portion by one or more arms connecting it thereto.

In the embodiment shown, the cap 14 has a resilient arm 14C therein which is arranged to engage with a feature (not shown) within the column 13 so as to retain the cap in engagement with the column (but in a manner which can be easily overcome by a user's finger pulling on the cap 14). However, when a security device (not shown but similar to that shown in Figures 6 and 7 described below) is inserted into the apparatus through a slot 10A in the upstand 12 and into a slot 13A in the column 13, it interacts with the resilient arm 14C so as to move the resilient arm 14C to a position which locks the cap 14 within the column 13. The cap 14 can then only be removed once the security device has been moved out of engagement therewith.

Figures 7 and 8 show perspective views of a further embodiment of the invention. The apparatus in these two figures is similar although that shown in Figure 8 has an additional memory card holder on the right hand side thereof. The apparatus has a base portion 20 and a lid portion 21 hinged thereto. Disk holding means 22 is provided on the base portion and an upstand 23 is provided for surrounding the periphery of a disk held thereon. The disk holding means 22 may take a variety of forms but in this embodiment it comprises a cylindrical column 24 for fitting through the central aperture of one (or more) disks. A cap 25 is then provided for fitting into the cylindrical column 24 so as to prevent the removal of disks therefrom. As shown, the cap 25 is affixed to (or may be part

of) the underside of the lid portion 21. The cap 25 comprises a generally cylindrical projection 25A which is shaped to fit into the cylindrical column 24 of the disk holding means 22 (when the lid portion 21 is closed) and a circular flange 25B for overlapping the upper surface of a disk held on the column 24. In some cases, the flange 25B may be provided by a wall of the lid portion 21 rather than projecting therefrom.

Other arrangements similar to those shown in Figures 5-8 may be used in which the obstruction cap is a separate component rather than being affixed to or integrally formed with some other part of the apparatus.

In the embodiments shown in Figures 5-8, the container is designed to receive a security device 26 of the type described in WO02/39451, rather than a device with a bifurcated end such as that shown in Figure 1. The security device 26 comprises a long arm 26A, a short arm 26B and a locking mechanism 26C, the arms 26A and 26B respectively engage the lid 21 and base portions 20 to hold the container closed and the locking mechanism 26C locks the device 26 to the container as it is inserted therein.

As the column 24 has a width similar to that of the aperture in a disk (the aperture typically being around 15mm in diameter) and the long arm 26A of the security device has a similar width, the container is adapted to receive the security device slightly off centre, i.e. slots 20A and 20B provided in the base portion 20 are not aligned with the centre of the disk holding means 22 but are offset therefrom, typically by about 7mm, so as to engage with a slot 24A provided in one side of the column 24. This may be achieved by offsetting the disk holding means 22 and upstand 23 from a central position within the base portion 20 and/or by offsetting the slot 20A from a central position in the edge of the base portion 20.

When the cap 25 is located within the column 24 and the security device 26 is inserted, the long arm 26A thereof engages with an abutment 25C of the cap 25 to prevent removal of the cap 25 from the column 24.

Figures 9 and 10 show perspective views of a further embodiment which is a variant of that shown in Figures 5 and 6, which comprises a base portion 30, a lid portion 31 hinged thereto, disk holding means 32 and an upstand 33 on the base portion 30 and obstructing means 34 pivotably mounted to the upstand 33.

The obstructing means 34 comprises a generally circular cap 34A with two curved arms 34B extending therefrom the other ends of which are pivotably mounted to the upstand 33 and a projecting part 34C projecting from the cap 34A. Figure 10 shows the obstructing means 34 in a raised position and Figure 9 shows the upstand in its lower position in which the projecting part 34C fits within the disk holding means 32.

As described in relation to Figures 5 and 6, the apparatus is adapted to receive a security device (not shown), through a slot 35 through a side wall of the base portion 30, a cut-out 32A one side of the disk holding means and in a slot 36 which receives the distal end of the security device. Figures 9 and 10 also show shield members 35A and 36A adjacent the slots 35 and 36. Figure 10 shows a formation 32B on a side of the disk holding means which provides a recess in the internal surface thereof for receiving a resilient arm (similar to that shown at 14C in Figure 6) of the projecting part 34C and an interrupted wall 37 on the base portion which provides a platform on which the central area of a disk (not shown) mounted on the holding means 32 is supported.

In a further arrangement (not shown), the obstructing means may form part of or be attached to the holding means. The holding means may, for instance, comprise one or more lateral projections which, in a first position, are retracted or only project a small distance so as to, at the most, only loosely retain a disk located on the holding means. However, when the security device is installed under the holding means it interacts therewith so as to push the projections radially outwards to an extent that they prevent removal of the disk from the holding means. With the projections in this second position, the disk is thus locked thereon until the security device is withdrawn whereupon the projections

move back, or can be pushed back, to their retracted or partially retracted position, to permit removal of the disk.

One such lateral projection may suffice but preferably two are provided on diametrically opposite sides of the holding means each being pushed out by an edge of the long arm of the security device as it passes under the holding means.

A cap or other insert designed to be installed from above may likewise be arranged to expand or enlarge the holding means or at least part thereof as it is inserted therein so as to enhance the engagement between the holding means and the disk so as to secure the disk thereon. In such an arrangement, the cap need not be provided with a flange to overlie the disk as this is not needed to secure the disk on the holding means.

The invention may also be applied to apparatus for holding other types of article. The holding means may take many different forms depending upon the shape and nature of the article to be held. It may, for example, comprise a slot, receptacle or other form of housing adapted to receive the article(s) in question. One or more such holding means may be provided in the apparatus. In some cases, the internal walls of the apparatus may provide the holding means.

The obstructing means may, similarly, take many different forms depending upon the shape and nature of the article and the holding means. Likewise, the securing means may take many different forms. However, it is preferable for the locking means thereof to be of a nature such that it can be released by the same release apparatus used to release locking means used in other apparatus, such as that described in WO02/39451 so that retail outlets do not have to use different release apparatus for different merchandise. Such release apparatus comprises two magnets, one for releasing the locking mechanism and another for assisting in withdrawal of the security device.

The apparatus described above is also preferably used in conjunction with Electronic Article Surveillance (EAS) devices or tags. Such tags come in a variety of forms and may be affixed to the container itself but are preferably affixed to the obstructing means and/or to the securing means so as to be locked in the apparatus but removeable therefrom for use in another container when the security means and/or obstructing means is withdrawn from the container. An EAS tag may, for example, be affixed to the long arm of the security device 8 in the position indicated by dashed lines 8D in Figures 1-3. The security device 26 shown in Figure 7 has a recessed area 26D towards the distal end thereof for receiving an EAS tag.

Alternatively, or in addition, an EAS tag may be provided on a cap 7 such as that shown in Figures 1-3, e.g. around the circular flange 7A or on the lifting portion 7D.